

United States Court of Appeals for the Federal Circuit

2007-1457

EPISTAR CORPORATION,

Appellant,

v.

INTERNATIONAL TRADE COMMISSION,

Appellee,

and

PHILIPS LUMILEDS LIGHTING COMPANY, LLC,

Intervenor.

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Appealed from: United States International Trade Commission

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Appeal from the United States International Trade Commission in Investigation No. 337–TA–556.

DECIDED: May 22, 2009

Before RADER, ARCHER, and DYK, Circuit Judges.

RADER, Circuit Judge.

The United States International Trade Commission (“ITC” or “Commission”) found that Epistar Corporation (“Epistar”) infringed U.S. Patent No. 5,008,718 (“the ’718 patent”). In reaching this determination, the Commission estopped Epistar from challenging the validity of the ’718 patent. The Commission also construed the claim terms “transparent window layer” and “substrate” of claims 1 and 6. After finding infringement, the Commission issued a limited exclusion order (“LEO”) prohibiting the

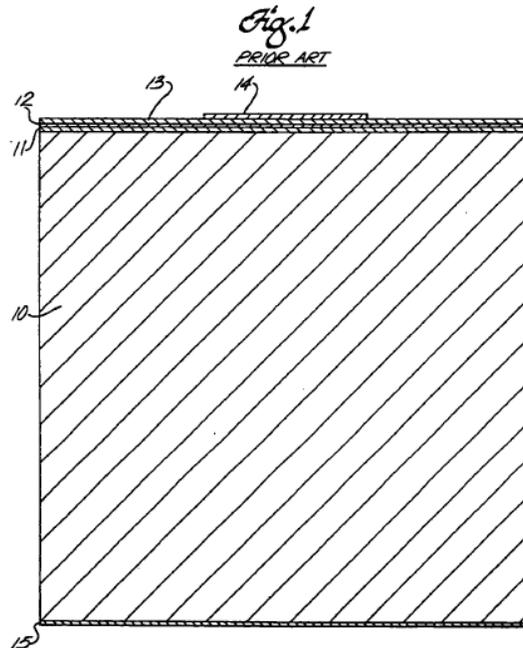
importation of Epistar’s downstream light emitting diode (“LED”) products, regardless of the manufacturer or importer of these products. Because the Commission erred in estopping Epistar from arguing invalidity of the ’718 patent when asserted against its products, but correctly construed the claim terms, this court affirms—in-part, reverses—in-part, and remands to the ITC with instructions to permit reconsideration of validity arguments. This court also vacates the LEO and remands to the Commission for reconsideration.

I.

Intervenor Philips Lumileds Lighting Company (“Lumileds”) owns the ’718 patent, titled “Light-Emitting Diode with an Electrically Conductive Window.” The patent claims an LED with a special electrically conductive, transparent window layer on top of active LED layers of the semiconductor device. ’718 patent col.5 l.32–col.6 l.45. The transparent window layer enhances current spreading with less light absorption, thereby providing a brighter light output and improved efficiency. ’718 patent at col.2 ll.4–8. The invention includes a semiconductor substrate, an electrical contact to the substrate, active layers of AlGaInP overlying the substrate, a transparent window layer of semiconductor different from AlGaInP overlying the active layers, and an electrical contact on top of the window layer. Id., col.2 l.48–col.3 l.5. The transparent window layer has a higher electrical conductivity and lower resistivity than AlGaInP. Id., col.2 ll.11–18, 57–59; col.3 ll.6–10.

Prior art surface-emitting LEDs, as depicted by figure 1 of the ’718 patent shown below, generally comprise an absorbing substrate 10 on which several epitaxial layers 11–13 are grown to form the LED. These epitaxial layers may include an n-type

confining layer 11 of AlGaInP grown on top of the substrate 10, followed by an active layer 12 of the same material, and a p-type confining layer 13 of the same material topping the active layer. This technological field refers to the combination of the p-type confining layer 13, active layer 12, and n-type confining layer 11 as the “p–n junction.” The LED generally provides a front, opaque electrical contact 14 on the front or emitting face of the LED, and a back electrical contact 15 on the substrate. *Id.*, fig. 1; col.1 ll.17–32.



For efficient operation, this type of LED injects current from the front metal contact and spreads it out laterally to the edges of the LED chip to generate uniform light across the “p–n junction.” However, when the sheet resistance of the upper p-type confining layer is not low enough, the current will not spread. Instead, the current will tend to flow directly down beneath the front contact toward the back contact. This defect results in most of the light being generated under the opaque front contact,

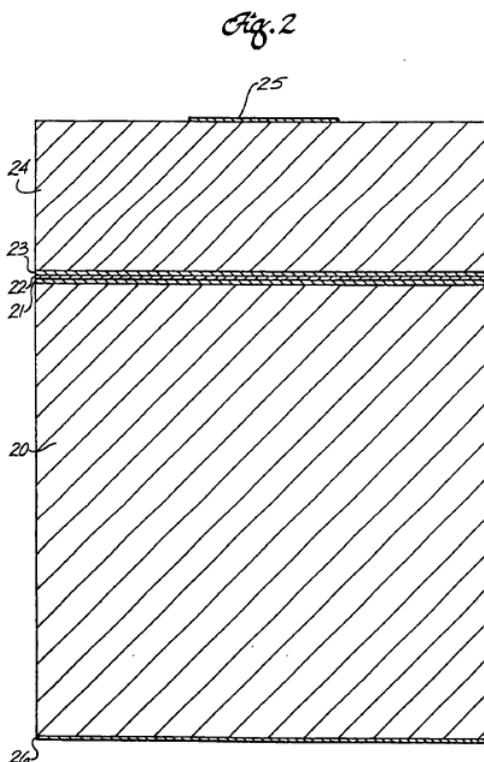
referred to as “current crowding.” When current crowding occurs, “much of the light generated in this region is blocked and absorbed within the LED chip, thereby severely limiting the efficiency of the device.” ’718 patent col.1 ll.33–46.

According to the ’718 patent specification, the prior art did not effectively solve this current crowding problem because the metal patterns that spread the current continued to block light emission. Transparent front contacts comprised of indium–tin oxide (“ITO”) were also unsatisfactory because they did not adequately spread the current. Id., col.1 l.57–col.2 l.3.

To solve these prior art difficulties of current crowding and high resistivity, the claimed invention teaches a transparent window layer with a higher electrical conductivity, and lower resistivity, than AlGaInP. This transparent window layer overlays the active AlGaInP LED layers and distributes current from the front contact to the active layers. The invention thus generates more uniform emission of light throughout the p–n junction and improves the efficiency of the device. Id., col.2 ll.4–30.

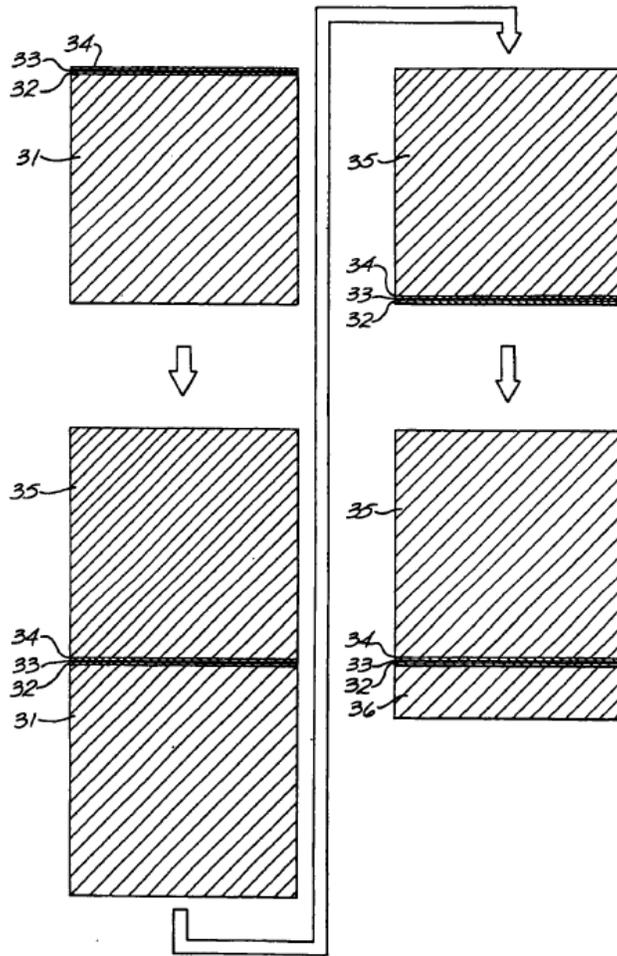
The specification describes and illustrates two exemplary embodiments of an LED, constructed according to the principles of the claimed invention. Id., col.2 ll.48–50, 60; col.4 ll.36–56. Particularly, as shown in figure 2 below, the specification describes an LED “having active p–n junction layers [21–23] of AlGaInP overlain by a transparent window layer [24] of semiconductor different from AlGaInP, with a low resistivity and a bandgap greater than the active layers, so that the overlying layer is transparent to light emitted by the p–n junction.” Id., col.2 ll.11–19. The specification describes this first embodiment as “[a]n exemplary light emitting diode (LED) constructed according to principles of this invention [that has] an n–type substrate” 20

with overlying active layers 21–23 and a transparent window layer 24 overlying the active layers. *Id.*, col.2 l.48–col.3 l.5.



The alternative embodiment in figure 3 below fabricates an LED by “epitaxially growing active AlGaInP layers [32–34] on a GaAs temporary substrate [31], epitaxially growing on the active layers a layer of semiconductor [35] having a crystal mismatch with GaAs and a bandgap greater than the bandgap of the active layers, and selectively removing the GaAs temporary substrate.” *Id.*, col.2 ll.21–26. The specification states, “this leaves a layer of transparent semiconductor [35] adjacent to the active layers [32–34] which has sufficient thickness to provide the strength of a substrate.” *Id.*, col.2 ll.26–30.

Fig. 3



A.

Epistar merged with United Epitaxy Company (“UEC”) sometime before this litigation. Before that merger, both companies had a history of litigation with Lumileds over the '718 patent. In 1999, Lumileds brought suit against UEC in the Northern District of California, alleging that UEC’s products infringed the '718 patent. See United Epitaxy Co. v. Hewlett-Packard Co., No. C-00-2518-CW (N.D. Cal. Sept. 7, 1999). In response, UEC challenged the patent’s validity. In June 2001, District Judge Claudia Wilken granted Lumileds’ motion for summary judgment that the '718 patent claims were not indefinite, anticipated, or unenforceable due to inequitable conduct. Id., No.

C-00-2518-CW, slip op. at 18-19, 23-24. The district court further denied UEC's cross-motion for summary determination of non-infringement, indefiniteness, obviousness invalidity, and misjoinder of an inventor. Id., No. C-00-2518-CW, slip op. at 6-23, 25.

On August 30, 2001, Lumileds and UEC settled the litigation by negotiating and executing a Settlement Agreement and Mutual Release, Stipulated Consent Judgment, and License Agreement. Lumileds granted UEC a license to use the '718 patent for the manufacture, sale, and importation of LEDs with absorbing substrates, in exchange for an up-front fee and royalty payments. UEC also covenanted, on behalf of itself and its successors, not to challenge the '718 patent's validity.

Later, from January 2003 through July 2004, Lumileds asserted the '718 patent against Epistar in district court. See Lumileds Lighting U.X., LLC v. Epistar Corp., No. C-03-1130-CW (N.D. Cal. Jan. 10, 2003). Settling the litigation, Lumileds granted Epistar a license to use the '718 patent in the manufacture of absorbing-substrate LEDs in exchange for a substantial lump-sum payment (nearly twice that in the UEC agreement), but no ongoing royalty requirement. With respect to the licensed products, Epistar promised not to challenge the validity of the '718 patent, but retained the right to challenge its validity if Lumileds sued Epistar for infringement in the future. The agreement was silent with respect to non-licensed products, preserving Epistar's statutory right to contest validity of the '718 patent when asserted against those products.

B.

Lumileds filed suit under 19 U.S.C. § 1337 in the ITC on November 4, 2005, to prevent the importation into the United States, the sale for importation, and the sale within the United States after importation of certain high-brightness LEDs and products due to infringement of claims 1 and 6 of the '718 patent. The Commission instituted an investigation on December 8, 2005. See Certain High-Brightness Light Emitting Diodes and Products Containing Same, 70 Fed. Reg. 73,026 (Int'l Trade Comm'n Dec. 8, 2005) (Inv. No. 337-TA-556).

The complaint originally named two respondents, UEC and Epistar. On December 30, 2005, UEC merged into Epistar, with UEC ceasing to exist as a separate entity. As part of the merger agreement, Epistar, as the surviving company, agreed that:

all the assets, debts, rights, and obligations (including, but not limited to the patent right, copyright, trademark right and contract, etc.), which are still valid up to the merger benchmark date, of the company to expire [UEC] shall be borne by the company to exist as a whole [Epistar]. All the lawsuits, non-lawsuit cases, arbitrations, and other procedures, which continue to be valid, of the company to expire at the merger benchmark date shall be borne by the company to exist as the party concerned.

As such, Epistar assumed all of UEC's assets, liabilities, contractual and patent-related rights and obligations, and UEC's status as a party to the Commission investigation. Since the merger, Epistar has continued to manufacture UEC's MB and GB products, as well as the OMA products that Epistar manufactured before the merger. Epistar has also developed new products: MB II, GB II, and OMA II.

"OMA" refers generally to Epistar's AlGaInP LED products that use an active LED layer of at least AlGaInP. An AlGaInP LED refers to an LED that uses an active

layer of semiconductor comprised of at least a combination of aluminum, gallium, indium, and phosphorus. An ITO LED refers to an LED that uses a current-spreading layer of indium-tin oxide to enhance LED efficiency with higher light output. The designation "OMA II" refers to the second generation of OMA products that Epistar is developing.

"MB" and "GB" refer generally to Epistar's "metal bond" and "glue bond" LEDs that use an active LED layer of at least AlGaInP. The designations "MB II" and "GB II" refer to a second-generation of MB and GB products, respectively, that Epistar is developing. For simplicity, the terms "MB I," "GB I," and "OMA I" are referred to as the first-generation of MB, GB, and OMA LED products as distinct from the second-generation of products. Also, the terms "MB LEDs" or "MB LED products" refer generally to both the MB I and MB II LED products; the terms "GB LEDs" or "GB LED products" refer generally to both the GB I and GB II LED products; and the terms "OMA LEDs" or "OMA LED products" refer generally to both the OMA I and OMA II LED products.

C.

Lumileds moved in early 2006 for a summary determination that Epistar could not assert the invalidity of the '718 patent in defense of its Epistar-UEC LED products. Lumileds argued that the UEC merger bound Epistar to the UEC agreement with Lumileds, prohibiting a challenge of invalidity of the '718 patent against UEC products. Lumileds also claimed that Epistar's merger with UEC prevented a validity challenge on Epistar's own products as well.

On April 13, 2006, in Order No. 14, Administrative Law Judge Sidney Harris ruled that the UEC–Lumileds agreement precluded Epistar from contesting the validity of the '718 patent with respect to any UEC or Epistar product: “Epistar, like UEC, is barred from raising an invalidity defense to the assertion of infringement of the '718 patent against any product” because “Epistar, like UEC, would be contractually estopped from raising an invalidity defense to the '718 patent.” Initial Determination Granting Complainant Lumileds’ Motion for Partial Summary Determination to Dismiss Epistar’s Affirmative Defense that the '718 Patent Claims are Invalid, No. 337–TA–556, Order No. 14, at 17 (Int’l Trade Comm’n Apr. 13, 2006). This ruling did not acknowledge the separate Epistar–Lumileds settlement agreement that preserved Epistar’s right to challenge validity with respect to Epistar products.

On April 28, 2006, Lumileds amended its complaint to accuse the Epistar OMA products of infringing the '718 patent. The Commission declined to review Order No. 14, which became final on May 15, 2006. See Notice of Commission Determination Not to Review an Initial Determination Granting Complainant’s Motion For Partial Summary Determination to Dismiss an Affirmative Defense, No. 337–TA–556 (Int’l Trade Comm’n May 15, 2006).

The Administrative Law Judge (“ALJ”) later recognized that two separate agreements were at issue in this case: (1) the UEC–Lumileds agreement and (2) the distinct Epistar–Lumileds settlement that preserved Epistar’s right to challenge the validity of the '718 patent in subsequent litigations. At the August 2, 2006, pre–trial conference, the ALJ explained:

I just reread my ruling under Order Number 14, and it was based primarily on the [UEC] consent judgment, so the [UEC] consent judgment was

broader than Epistar's license. It didn't take account of the qualification in the Epistar license . . . I never took into account the fact that the Epistar license was different than the UEC license . . . The consent judgment in that case doesn't take into account the qualification which is included in the Epistar license.

Pre-Hr'g Conference Tr. 60-63, Aug. 2, 2006 (Inv. No. 337-TA-556). Epistar explained that it briefed to the Commission the existence of the two different licenses, a fact that Lumileds acknowledged. Id. at 61, 64.

Epistar then sought to contest the validity of the '718 patent as to its products at the hearing. Nonetheless, the ALJ determined that it was too late because Order No. 14 became final when the Commission declined review. Id. at 67-68 (ALJ: "Well, I can't reconsider it right now because it's a Commission decision, so I'm not going to consider it again during the hearing" Ms. Coyle: "Could we have permission then to put on an invalidity case for the '718 patent?" ALJ: "No.").

D.

Litigation proceeded separately on claim construction. The claim construction issues on appeal, adopted by the Commission, cover the terms "transparent window layer" and "substrate" in claims 1 and 6 of the '718 patent. Claim 1, from which claim 6 depends, states:

1. A light emitting diode comprising:
 - a semiconductor substrate;
 - an electrical contact to the substrate;
 - active p-n junction layers for AlGaInP over the substrate for emitting light;
 - a transparent window layer of semiconductor different from AlGaInP over the active layers and having a bandgap greater than the bandgap of the active layers and a resistivity lower than the active layers; and

a metal electrical contact over a portion of the transparent layer.

'718 patent col.5 ll.33–44 (emphases added).

1. “transparent window layer”

The ALJ construed “transparent window layer” as “a transparent layer that spreads current, composed of semiconductor material different from AlGaInP, where the material has a bandgap greater than the bandgap of the active layers and a resistivity lower than the active layers.” Order Construing the Terms of the Asserted Claims of the Patents at Issue, No. 337–TA–556, Order No. 27, at 16–19 (Int'l Trade Comm'n July 31, 2006) (“Claim Construction Order”).

During the Commission proceedings, Epistar argued that the specification disavowed the use of ITO in the window layer. Epistar further argued that the “transparent window layer” feature cannot use ITO because such a construction would render the claim anticipated or obvious in view of the prior art. Specifically, Epistar cited U.S. Patent No. 4,495,514 (“Lawrence”) and a 1980 Japanese Patent Application No. JP57111076A to Yamagoshi, et al. (“Yamagoshi”), to support its argument and attempt to contest the validity of the '718 patent. Claim Construction Order, slip op. at 16–19.

After examining the relevant intrinsic evidence, the ALJ rejected Epistar's proposed interpretation. The ALJ found that the specification did not “expressly disavow the use of ITO.” Id. at 29. He explained that “references in the specification to ITO discuss drawbacks to the use of ITO as a front contact, not as a transparent window layer.” Id. The ALJ also declined to find that a “statement in the background section that the use of ITO was not ‘completely satisfactory’ as a front contact is a disclaimer that ITO does not fall within the scope of the claimed ‘transparent window

layer.” Initial Determination, No. 337–TA–556, slip op. at 39–40 (Int’l Trade Comm’n Jan. 8, 2007). The ALJ also rejected Epistar’s argument that the specification’s verbiage “‘by promoting current spreading without blocking the light generated or increasing series resistance’ serves as a limitation on the claimed ‘transparent window layer.’” Id. at 40. Accordingly, the ALJ construed the scope of “transparent window layer” to include ITO.

2. “substrate”

The Commission on review construed the term “substrate” differently from the ALJ. Commission Opinion on Violation, Remedy, The Public Interest, and Bonding, No. 337–TA–556, slip op. at 8–12 (Int’l Trade Comm’n May 9, 2007) (“Commission Opinion”). The ALJ construed “substrate” as “the supporting material in an LED upon which the other layers of an LED are grown or to which those layers are attached.” Id. at 8. Based on the intrinsic evidence, the Commission modified that construction to include the case in which “the supporting material functioning as the substrate is grown on top of, or attached to, the other layers.” Id. at 12.

In construing the term, the Commission rejected Epistar’s contention that the substrate is limited to a single layer. The Commission found no support in the specification for Epistar’s proposed interpretation. Particularly, the Commission explained that the “single layer” interpretation of “[substrate] is too limiting because we find that this term may include multiple layers (elements).” Id. In this regard, the Commission noted that the specification does not “contain any disclaimer limiting a ‘substrate’ to a single layer,” but rather that “the LED structure depicted [in the specification] is described as exemplary, and therefore we view the [substrate] helping

to form the LED structure as exemplary as well.” Id. Accordingly, the Commission construed “substrate” to include additional layers beyond a single layer.

E.

On May 9, 2007, the ITC issued a LEO based on its final determination that Epistar infringed claims 1 and 6 of the '718 patent. Limited Exclusion Order, No. 337–TA–556 (Int’l Trade Comm’n May 9, 2007). The LEO excluded from entry into the United States Epistar’s infringing LED products. Id. at 2. This exclusion included downstream “packaged LEDs containing the infringing LEDs and boards primarily consisting of arrays of such packaged LEDs,” regardless of the manufacturer or importer of these products. Id.

Epistar filed a Motion for Temporary Remand and Order to Modify Limited Exclusion Order in this court on April 6, 2009. Epistar moved this court to temporarily remand this case to the ITC with instructions that the ITC modify its LEO to comport with this court’s decision in Kyocera Wireless Corp. v. International Trade Commission, 545 F.3d 1340 (Fed. Cir. 2008). This court in Kyocera Wireless held that the ITC lacks statutory authority to issue a LEO that excludes imported products by entities not named as respondents before the ITC. 545 F.3d at 1345, 1357–58. Epistar did not raise this issue in its briefs, nor did the court hear argument on this issue at the June 6, 2008, hearing.

On October 28, 2008, shortly after this court released Kyocera Wireless, Epistar petitioned the Commission to modify or rescind the LEO. The ITC Office of Unfair Import Investigation responded, supporting the requested modification. Lumileds opposed the motion and instead sought a General Exclusion Order under 19 U.S.C.

§ 1337(d)(2). The Commission has not ruled on this motion due to the pending appeal in this case.

Accordingly, this court must address the validity estoppel order, the claim construction issues, and the enforceability of the LEO. Epistar does not challenge the infringement determination under the Commission's claim construction. This court has jurisdiction over this appeal under 19 U.S.C. § 1337(c) and 28 U.S.C. § 1295(a)(6).

II.

This court reviews the Commission's summary determinations without deference as a question of law. Hazani v. Int'l Trade Comm'n, 126 F.3d 1473, 1476 (Fed. Cir. 1997). This court also reviews the Commission's interpretation of the UEC and Epistar settlement agreements as a question of state law. Semitool, Inc. v. Dynamic Micro Sys. Semiconductor Equip. GmbH, 444 F.3d 1337, 1341 (Fed. Cir. 2006); Tex. Instruments, Inc. v. Tessera, Inc., 231 F.3d 1325, 1329 (Fed. Cir. 2000).

In their settlement agreements, the parties agreed that the terms of the agreements shall be "construed under the laws of the State of California." Under California state law, contracts are interpreted without deference on appeal. Plaza Freeway Ltd. v. First Mountain Bank, 96 Cal. Rptr. 2d 865, 868 (Cal. Ct. App. 2000). The California Civil Code supplies basic rules for contract interpretation: (1) "clear and explicit" language that does not produce an absurdity will govern, Cal. Civ. Code § 1638 (1872); (2) ambiguous terms receive the meaning "which the promisor believed, at the time of making it, that the promisee understood," Cal. Civ. Code § 1649 (1872); and (3) ambiguity persisting beyond the application of the previous rule will be resolved against "the party who caused the uncertainty to exist," Cal. Civ. Code § 1654 (1982). In sum,

contract interpretation is governed by the objective intent of the parties as embodied in the words of the contract. Beck v. Am. Health Group Int'l, Inc., 260 Cal. Rptr. 237, 241–42 (Cal. Ct. App. 1989).

This court also reviews the Commission's claim construction without deference. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1451 (Fed. Cir. 1998) (en banc). Generally, this court gives claim terms their ordinary and customary meanings, according to the customary understanding of a person of ordinary skill in the art who reads them in the context of the intrinsic record. See Phillips v. AWH Corp., 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). The specification "is the single best guide to the meaning of a disputed term." Vitronics Corp. v. Conceptoronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). This court recognizes, however, "there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification." Comark Commc'ns, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998).

Finally, this court reviews the Commission's LEOs for actions that are arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law. Hyundai Elecs. Indus. Co. v. Int'l Trade Comm'n, 899 F.2d 1204, 1207–08 (Fed. Cir. 1990).

A.

Before the ITC, Lumileds argued that UEC agreed it would not contest the validity of the '718 patent and that the settlement would apply to its successors. Lumileds contended that the merger should not permit UEC to escape its agreement not to contest the validity of the '718 patent. Lumileds did not contest the language of the

individual settlement agreements, but stressed that UEC's merger with Epistar bound Epistar to UEC's settlement agreement.

This court finds that Epistar's right to contest validity of the '718 patent with respect to its products is governed by its own separate agreement with Lumileds. Epistar (as successor to UEC) may not contest the validity of the '718 patent with respect to the UEC products that it inherited in the merger. Black letter contract law states that the assignment of a contract to an assignee, such as from UEC to Epistar, only changes the obligated party, not the scope of the obligation. See, e.g., Arthur L. Corbin, Corbin on Contracts § 884, at 488 n.13 (1993) (An "assignor has no power, by assignment or otherwise, to change in any material way the performance to be rendered by the obligor.").

Preserving the rights that Epistar separately secured by contract does not in any respect permit UEC to escape its obligations. When Lumileds settled with Epistar, the settlement agreement addressed only the licensed products and thereby preserved Epistar's unrestricted right to contest the validity of the patent in other contexts. This court cannot allow Lumileds to escape its agreements due to a merger that does not disturb its contract with Epistar. In other words, Lumileds cannot fortuitously gain rights against Epistar that it could not secure pre-merger. Thus, the settlement agreement binds the parties, as understood and intended by them, according to its ordinary terms. See Beck, 260 Cal. Rptr. at 241-42; see also Restatement (Second) of Contracts § 201(1) (1981); id., § 202(5) ("Wherever reasonable, the manifestations of intention of the parties to a promise or agreement are interpreted as consistent with each other and with any relevant course of performance, course of dealing, or usage of trade.").

In Medtronic AVE, Inc. v. Advanced Cardiovascular Systems, Inc., C.R. Bard, Inc. (“Bard”) and American Cardiovascular Systems (“ACS”) entered into an agreement to arbitrate any dispute over the licensed patents in the case. 247 F.3d 44, 49 (3d Cir. 2001). Medtronic/Arterial Vascular Engineering, Inc. (“AVE”) acquired Bard and assumed its obligations. Id. at 48 n.1. AVE then sued ACS for patent infringement. AVE’s claims related to its own products, not Bard’s. The Third Circuit rejected ACS’s argument that its agreement with Bard required AVE to arbitrate:

[A]ssignment of a contract will result in the assignee stepping into the shoes of the assignor with regard to the rights that the assignor held and not in an expansion of those rights to include those held by the assignee. “An assignment does not modify the terms of the underlying contract. It is a separate agreement between the assignor and the assignee which merely transfers the assignor’s contract rights, leaving them in full force and effect as to the party charged.”

Id. at 60 (quoting Citibank, N.A. v. Tele/Resources, Inc., 724 F.2d 266, 269 (2d Cir. 1983)) (emphases added).

A “straightforward principle” allowed the court to reject ACS’s assumed–obligation argument: “[W]hile it is true that when AVE accepted the assignment of the 1992 agreement from Bard it ‘step[ped] into [Bard’s] shoes,’ . . . the agreement to arbitrate cannot be applied to AVE’s separate interests that Bard never owned.” Medtronic, 247 F.3d at 56 (citations omitted); see also Spindelfabrik Suessen–Schurr, Stahlecker & Grill GmbH v. Schubert & Salzer Maschinenfabrik Aktiengesellschaft, 829 F.2d 1075, 1081–82 (Fed. Cir. 1987) (company that purchased patent, and was thereby bound by patent seller’s agreement not to sue patent licensee for infringement with respect to that patent, was not barred from suing the licensee for infringement on

another patent it held prior to the purchase). This case fits well into that reasoning and result.

UEC's settlement agreement has preclusive effect upon Epistar only "to the same extent as upon [UEC it]self." Restatement (Second) of Judgments § 43 (1982). The preclusive effect of that agreement, if any, is limited to UEC's pre-Epistar product lines. To paraphrase this court in International Nutrition Co. v. Horphag Research, Ltd., Epistar's acquisition of UEC does not have the effect of limiting Epistar's rights that are unrelated to the product lines it acquired from UEC. 220 F.3d 1325, 1329 (Fed. Cir. 2000). Accordingly, this court overturns the Commission's final determination that Epistar is estopped from challenging validity of the '718 patent when asserted against its own products, separate from the UEC-Lumileds settlement agreement.

B.

The ALJ construed "transparent window layer" as "a transparent layer that spreads current, composed of semiconductor material different from AlGaInP, where the material has a bandgap greater than the bandgap of the active layers and a resistivity lower than the active layers." Claim Construction Order, slip op. at 16–19. Epistar does not challenge or propose an alternative to this construction. It argues instead that the inventors disclaimed the use of ITO in the window layer.

To prevail, Epistar must establish the inventors "demonstrate[d] an intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002). With respect to Epistar's arguments that the inventors disavowed the

use of ITO during the prosecution history, Epistar must also overcome a heavy presumption that claim terms carry their full ordinary and customary meaning, unless it can show the patentee expressly relinquished claim scope. Omega Eng'g v. Raytek Corp., 334 F.3d 1314, 1323 (Fed. Cir. 2003). For the following reasons, Epistar's arguments fall short of these standards.

Epistar argues that the Commission erred in permitting "transparent window layer" to encompass a current spreading window layer of ITO because "the very purpose of the '718 patent was to address problems with . . . the use of ITO." The specification of the '718 patent states:

The techniques proposed for minimizing the current crowding problem in AlGaInP LEDs have not been completely satisfactory Another technique is to use a transparent front electrical contact such as an indium–tin oxide instead of metal. Such transparent electrical contacts have high resistivity and lead to high series resistance in the device. Because of such shortcomings, it is desirable to provide a technique for distributing current from the front contact to the active p–n junction so that light is emitted more uniformly throughout the junction and device efficiency is enhanced.

'718 patent col.1 ll.57–59; col.1 l.67–col.2 l.8 (emphasis added). Although "transparent front electrical contact" and "transparent window layer" are separate structures, nowhere does the '718 patent specification or prosecution history state or suggest that ITO should not be used as a transparent window layer.

The ALJ correctly determined that the '718 patent does not disclaim the use of ITO as a window layer:

The Administrative Law Judge confirms that he does not find a clear disavowal of the use of ITO as a transparent window layer in the specification of the '718 patent. The specification does describe two unsatisfactory techniques proposed for minimizing the current crowding solution which include the modification of the front contact. One of those techniques involved the replacement of a metal front electrical contact with

ITO. The Administrative Law Judge does not find, however, that a statement in the background section that the use of ITO was not “completely satisfactory” as a front contact is a disclaimer that ITO does not fall within the scope of the claimed “transparent window layer,” which serves a distinct function in an LED.

Initial Determination, slip op. at 39–40.

The '718 patent's discussion of ITO addresses the “current crowding” problem, by using a transparent contact that permits more light to escape than an opaque metal contact. '718 patent col.1 l.67–col.2 l.3. A transparent contact does not block the light generated under the contact. Although current crowding still occurs, the use of a transparent contact, such as ITO, diminishes the problems of a metal contact.

In any event, this technique is not relevant to the '718 patent, which does not modify the front contact to solve the current crowding problem. Instead, the invention keeps the opaque “metal electrical contact” 25 but adds a “transparent window layer” 24 beneath it. Id. The claims and specification of the '718 patent consistently treat these two structures as separate and distinct elements. See, e.g., id., col.2 l.66–col.3 l.13 (claims 1 and 6 discussing metal electrical contact 25 and transparent window layer 24 in Figure 2).

In LizardTech, Inc. v. Earth Resource Mapping, Inc., this court held that where two steps (or structures) are “entirely different concepts and procedures” and identified as separate steps in the claims, no skilled artisan could reasonably construe them as a single element. 424 F.3d 1336, 1342–43 (Fed. Cir. 2005) (excluding the “altogether distinct process of taking a DWT [discrete wavelet transform]” from the scope of the claim term “maintaining updated sums of DWT coefficients”). As in LizardTech, the

transparent front electrical contact is “entirely different” from the transparent window layer. Id.

Even if the patent specification did disparage the use of ITO as a window layer, this criticism does not rise to the level of a disavowal. Disavowal requires “expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.” Teleflex, 299 F.3d at 1325. A patentee’s discussion of the shortcomings of certain techniques is not a disavowal of the use of those techniques in a manner consistent with the claimed invention.

For example, in Micro Chemical, Inc. v. Great Plains Chemical Co., the patentee explained in the background section of the patent that a prior art device using the “weigh dump method” was too slow and too inaccurate. 194 F.3d 1250, 1260 (Fed. Cir. 1999). The patent did not assert that the “weigh dump method” itself was the reason for the inaccuracies or slowness. Id. This court ruled that the patentee did not disavow the use of the “weigh dump method,” even if the claim were construed as a step-plus-function claim under 35 U.S.C. § 112, ¶ 6. Micro Chem., 194 F.3d at 1259–60.

Moreover, this case does not present an instance where an inventor distinguishes an invention over the prior art in an unmistakable disavowal of those prior art features. In Phillips, this court recognized that in certain cases, “the specification may reveal an intentional disclaimer, or disavowal, of claim scope by the inventor.” 415 F.3d at 1316. In such cases, this court interprets the claim more narrowly than it otherwise would to give effect to the inventor’s intent to disavow a broader claim scope. Id.; Honeywell Int’l, Inc. v. ITT Indus., Inc., 452 F.3d 1312, 1319–20 (Fed. Cir. 2006); SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1342–44

(Fed. Cir. 2001). By the same token, this court also recognizes that disparaging comments alone do not necessarily show a manifest or express disavowal of the criticized subject matter. See, e.g., Ventana Med. Sys., Inc. v. Biogenex Labs., Inc., 473 F.3d 1173, 1180–81 (Fed. Cir. 2006) (finding that general comments distinguishing the prior art were not sufficient to limit the term “dispensing” to “direct dispensing”); In re Am. Acad. of Sci. Tech. Ctr., 367 F.3d 1359, 1365–67 (Fed. Cir. 2004) (finding descriptions of the deficiencies of using mainframe computers did not exclude mainframes from the term “user computer” because the specification as a whole did not express a clear disavowal of that subject matter). In this case, the single, passing reference to ITO as a relatively unsatisfactory transparent electrical contact in the specification does not disavow the use of ITO as a transparent window layer.

Epistar argues that the '718 patent “cannot be construed to encompass ITO [because] the patent does not actually disclose a means of using it,” i.e., the use of ITO in the transparent window layer is not enabled in the '718 patent specification. See, e.g., Genentech, Inc. v. Novo Nordisk A/S, 108 F.3d 1361, 1365 (Fed. Cir. 1997) (“To be enabling, the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without undue experimentation.” (internal citations omitted)). This court has also held that “[a]n applicant is not required to describe in the specification every conceivable and possible future embodiment of his invention.” Cordis Corp. v. MedtronicAve Inc., 339 F.3d 1352, 1365 (Fed. Cir. 2003); see also Spectra–Physics, Inc. v. Coherent, Inc., 827 F.2d 1524, 1534 (Fed. Cir. 1987) (“If an invention pertains to an art where the results are predictable, . . . a broad claim can be enabled by disclosure of a single embodiment . . . and is not invalid for lack of

enablement simply because it reads on another embodiment of the invention which is inadequately disclosed.” (internal citations omitted)).

Because ITO as a transparent conductive layer was already known to those of skill in the art, the '718 patent specification did not need to make further enabling disclosures about its prior art uses. See, e.g., Spectra-Physics, 827 F.2d at 1534 (“A patent need not teach, and preferably omits, what is well known in the art.”). Epistar acknowledges that methods of fabricating transparent ITO layers were known in the art with its discussion of the Lawrence patent that discloses an ITO current spreading layer, i.e., “transparent electrode.” Accordingly, this court finds that the ALJ did not err in construing “transparent window layer.”

C.

The Commission construed “substrate” as “the supporting material in an LED upon which the other layers of an LED are grown or to which those layers are attached” and included the case in which “the supporting material functioning as the substrate is grown on top of, or attached to, the other layers.” Commission Opinion, slip op. at 8–12. Epistar disputes the Commission’s ruling that a “substrate” need not, by itself, provide adequate mechanical support for the LED. It argues a substrate can only be “a layer which is present as the supporting material that makes the device large and sturdy enough to manipulate, and which provides a surface upon which the other layers can be attached to, grown, or deposited.”

Claim 1 of the '718 patent requires only “a semiconductor substrate” and does not impose any limitation on its thickness or amount of mechanical support. '718 patent col.5 ll.33–44. Epistar does not cite to any statement in the specification or file history

suggesting that the substrate, by itself, must make the LED “large and sturdy enough to manipulate.” While the ’718 patent describes a thicker layer as a “substrate,” the Commission followed this court’s precedent in declining to limit the construction of “substrate” to that embodiment. See, e.g., Phillips, 415 F.3d at 1323 (“[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.”). Commission Opinion, slip op. at 10–11. Moreover, the specification explains that the thickness identified for the substrate is merely “exemplary.” ’718 patent col.5 ll.3–4.

Epistar also would limit “substrate” to a single layer. Although Epistar urges this court to apply the ALJ’s construction, which was modified by the Commission, Epistar does not point to any intrinsic evidence to justify this limitation on the broad term “substrate.” The Commission correctly declined to limit “substrate” to the preferred embodiments in the specification.

Moreover, the Commission’s construction is consistent with this court’s precedent that the disclosure of a preferred or exemplary embodiment encompassing a singular element does not, without more, disclaim a plural embodiment. See KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356 (Fed. Cir. 2000); see also AbTox, Inc. v. Exitron Corp., 122 F.3d 1019, 1023 (Fed. Cir. 1997). Therefore, consistent with established precedent, the term “substrate” may include one or more layers of “supporting material” for the active LED layers.

Epistar argues that the ITC’s construction renders the term “substrate” meaningless because “every layer below the active layers,” such as confining layers, would qualify as a substrate. To the contrary, claim 1 and the specification prevent the

substrate from encompassing these other layers. For example, even without the “adequate mechanical support” limitation, the confining layers cannot qualify as a substrate because they are part of the “active p–n junction layers,” defined by claim 1 and the specification as “on top of” and “over the substrate.” Id., col.2 ll.50–57; col.5 ll.36–37. Indeed, as disclosed in the embodiment of figure 2, the only layer below the active layers 21–23 is substrate 20, which meets the “semiconductor substrate” limitation of claim 1. See id., fig. 2; col.2 ll.48–59; col.5 ll.34–37. Accordingly, this court finds that the Commission did not err in construing the term “substrate.”

D.

The parties did not provide arguments at the June 6, 2008, hearing regarding Epistar’s Motion for Temporary Remand and Order to Modify Limited Exclusion Order (“LEO”). Nor did Epistar raise this issue in its briefs prior to the hearing. The issue, however, was not ripe until after this court released its opinion in Kyocera Wireless. Moreover, without this appeal, Epistar would be entitled to a modification of the LEO under 19 C.F.R. § 210.76(a)(1). Therefore, this court decides this issue in the interests of judicial efficiency and economy and the prevention of any further delays in this case.

This court in Kyocera Wireless held that the ITC lacks statutory authority to issue a LEO that excludes imported products by entities not named as respondents before the ITC. Kyocera Wireless, 545 F.3d at 1345, 1357–58. The Commission’s LEO improperly excludes downstream “packaged LEDs containing the infringing LEDs and boards primarily consisting of arrays of such packaged LEDs,” regardless of the manufacturer or importer of these products. Limited Exclusion Order, slip op. at 2. The Commission ordered this relief despite acknowledging that “Epistar does not itself

manufacture downstream products,” and “almost all of Epistar’s LED sales are to foreign entities who then incorporate the infringing LEDs into packaged LED and LED boards for importation into the U.S.” Commission Opinion, slip op. at 28. This court, therefore, vacates the current LEO and remands to the Commission for reconsideration.

III.

For the reasons stated above, the Commission erred as a matter of law in estopping Epistar from arguing invalidity of the '718 patent as to its products. The Commission correctly construed the claim terms “transparent window layer” and “substrate.” Finally, the Commission erred in extending the LEO to downstream products manufactured by third parties not named in this case.

AFFIRMED-IN-PART, REVERSED-IN-PART, and REMANDED

COSTS

Each party shall bear its own costs.